POST-DEVELOPMENT DRAINAGE AREA TABLE

DA	AREA(AC)	RCN	Tc(HRS)	NOTE
A	0.14	93	0.10	OUTFALL #1
B	3.98	88	0.48	OUTFALL #2
C	2.28	85	0.37	OUTFALL #3
D	1.55	73	0.25	OUTFALL #4
E	3.83	85	0.43	OUTFALL #5

POST-DEVELOPMENT TIME OF CONCENTRATION BREAKDOWN

FLOW ID	DRAINAGE AREA #A
A	SHALLOW CONCENTRATED FLOW, 206' PAVED @ 1.6%; 0.022 HOURS
TOTAL FLOW	**0.10 HRS. (MIN.)**

FLOW ID	DRAINAGE AREA #B
A	SHEET FLOW, 43' WOODS @ 1.0%; 0.412 HOURS
B	SHALLOW CONCENTRATED FLOW, 170' PAVED @ 1.0%; 0.023 HOURS
C	CHANNEL FLOW (PIPE FLOW), 681' @ 5 FPS; 0.038 HOURS
D	CHANNEL FLOW, 190' @ 5 FPS; 0.011 HOURS
TOTAL FLOW	**0.48 HRS.**

FLOW ID	DRAINAGE AREA #C
A	SHEET FLOW, 100' GRASS @ 1.0%; 0.309 HOURS
B	SHALLOW CONCENTRATED FLOW, 56' PAVED @ 1.0%; 0.010 HOURS
C	SHALLOW CONCENTRATED FLOW, 254' UNPAVED @ 1.0%; 0.035 HOURS
D	CHANNEL FLOW, 244' @ 5 FPS; 0.014 HOURS
TOTAL FLOW	**0.37 HRS.**

FLOW ID	DRAINAGE AREA #D
A	SHEET FLOW, 100' WOODS @ 20%; 0.244 HOURS
B	SHALLOW CONCENTRATED FLOW, 140' UNPAVED @ 21%; 0.005 HOURS
TOTAL FLOW	**0.25 HRS.**

FLOW ID	DRAINAGE AREA #E
A	SHEET FLOW, 100' WOODS @ 6.0%; 0.395 HOURS
B	SHALLOW CONCENTRATED FLOW, 297' UNPAVED @ 10%; 0.016 HOURS
C	CHANNEL FLOW, 263' @ 5 FPS; 0.015 HOURS
TOTAL FLOW	**0.43 HRS.**

POST-DEVELOPMENT RCN BREAKDOWN

DA	IMPERVIOUS AREA(AC)	AREA OF GRASS 'C' SOILS (AC)	AREA OF RESIDENTIAL 'C' SOILS (AC)	AREA OF WOODS 'C' SOILS (AC)	AREA OF WOODS 'D' SOILS (AC)
A	0.11	0.03	--	-	-
B	2.39	0.92	-	0.62	0.05
C	--	0.04	1.62	0.48	0.14
D	0.06	0.07	-	1.09	0.33
E	--	0.01	2.85	0.95	0.02

Environmental Site Design Summary

Practice	Area Treated (ft^2) (sf)	Area Treated (acres)	Impervious Treated (ft^2)	Rv	Max. 1-yr Treatment	ESDv (ft^3)	Actual Volume (ft^3)
Pervious Pavers	4,371.00	0.100	4,371.00	0.95	934.30	699.36	699.36
Micro-Bioretentions	25,650.00	0.589	16,027.00	0.61	3,534.03	3,287.43	3,287.43
Rain Gardens	28,476.00	0.654	28,476.00	0.95	6,086.75	3,308.76	3,308.76
Filterra Boxes	97,527.00	2.239	75,246.00	0.74	16,334.49	6,049.81	6,049.81
Step Pool Conveyance						3,069.00	3,069.00
				Total	26,889.57	**16,414.36**	16,414.36
				ESD_v Required		**16,218.90**	

Total Site P_e Provided:

$$P_e = \frac{(ESD_v)(12)}{(R_v)(A)}$$

P_e = 1.62 in.

Where:

ESD_v = 16,414.36 ft^3

R_v = 0.37

A (Total Site Area) = 333,265 ft^2

**Note: These values taken from the Stormwater Management Requirements sheet of these computations.*

S.W.M. SUMMARY NOTE

STORMWATER MANAGEMENT FOR THIS SITE IS PROVIDED IN ACCORDANCE WITH THE MDE 2000 MARYLAND STORMWATER DESIGN MANUAL. THIS DEVELOPMENT IS CLASSIFIED AS NEW DEVELOPMENT GIVEN THAT THE EXISTING IMPERVIOUS AREA ACCOUNTS FOR LESS THAN 40% OF THE TOTAL SITE AREA. STORMWATER MANAGEMENT IS PROVIDED FOR THE SITE AS FOLLOWS:

- ESDV COMPUTATIONS FOR REDEVELOPMENT SHOW THAT THE ESDV REQUIRED IS 16,218.90 CF. PERVIOUS PAVEMENT, MICRO-BIORETENTIONS, RAIN GARDENS, FILTERRA BOXES, AND A STEP POOL CONVYEANCE PROVIDE 16,414.36 CF OF ESDV.
- BECAUSE ALL OF THE ESD REQUIREMENTS ARE MET THROUGH ESD PRACTICES, CHANNEL PROTECTION VOLUME REQUIREMENTS ARE MET.
- OVERBANK FLOOD PROTECTION, OR MANAGEMENT OF THE 10-YEAR STORM EVENT, IS NOT REQUIRED SINCE THE SITE HAS DIRECT DISCHARGE TO AN EXISTING FEMA FLOODPLAIN.
- EXTREME FLOOD PROTECTION, OR MANAGEMENT OF THE 100 YEAR STORM EVENT IS NOT REQUIRED SINCE THE SITE HAS DIRECT DISCHARGE TO AN EXISTING FLOODPLAIN.

LEGEND

TIME OF CONCENTRATION — TOC — TOC — TOC —

DRAINAGE AREA BOUNDARY ■ ■ ■ ■ ■ ■ ■

POST-DEVELOPMENT DRAINAGE AREA MAP

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Rev. #	By	Date	Revisions Description

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

Terry Schuman — Date 12/10/14
19593 — 3/31/16
License No. — Expiration Date

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Date DECEMBER 2014
Job Number 10-3572
Scale 1" = 50'
Drawn By L.S.
Approved By T. SCHUMAN
Folder Reference HAYES PROPERTY, OLD SOLOMONS ISLAND ROAD, ANNAPOLIS

PROPOSED CONDITIONS DRAINAGE AREA MAP

SITE DEVELOPMENT PLANS
FOR
ANNAPOLIS TOWNES AT NEAL FARM

TAX MAP 51A, BLOCK 24, PARCELS 6, 8, AND 45
TAX MAP 51D, BLOCK 10, PARCEL 60, LOT 10
TAX MAP 51D, BLOCK 6, PARCELS 70, 391, AND 392
DORSEY DRIVE AND TYDING DRIVE
ANNAPOLIS, MARYLAND 21401
SECOND DISTRICT ANNE ARUNDEL COUNTY ZONED R4 / R1B / B2 CITY

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